

IN THE CLAIMS

1. (Currently Amended) A medical device lead connector system comprising:
 - (a) a connector header including a connector bore, the connector bore having an inner bore surface;
 - (b) a lead having a lead body, a plurality of elongated insulated conductors extending within the lead body between a plurality of lead electrodes at a lead body distal end and a lead connector at a lead body proximal end, the lead connector including:
 - an array of lead connector pads wherein the pads are distributed circumferentially in an adjacent spaced apart relationship around a periphery of the lead connector,
 - a connector pin proximal of the array of lead connector pads, the connector pin being coupled to one of the plurality of lead electrodes, and
 - each of the lead connector pads being coupled to an individual one of the other of the plurality of lead electrodes; and
 - (c) an adaptor, comprising:
 - an insulating adaptor body having a proximal end and a distal end;
 - a lumen within the adaptor body having an inner lumen surface extending from a proximal end to a distal end and dimensioned to receive the lead connector for relative rotational movement therein;
 - a connector ring extending circumferentially over a segment of an exterior surface of the adaptor body and shaped to form
 - an electrical contact resilient key along an inner portion of the connector ring extending through the insulating adaptor body into the lumen to project from the inner lumen surface, the key dimensioned so as to be in registration with a selected one of the lead connector pads at a time when the lead connector is inserted into the lumen of the adaptor body and rotated relative to the adaptor body about a longitudinal axis

extending from the proximal end of the insulating adaptor body to the distal end of the insulating adapter body so as to be in alignment with the selected lead connector pad;
wherein registration of the key with a selected one of the lead connector pads at a time provides for lead electrode array selectivity; and
wherein the insulating adaptor body is dimensioned to be received within the connector bore of the connector header.

2. (Previously presented) The medical device lead connector system of claim 1, wherein the external surface configuration of the insulating adaptor body conforms to an industry standard.

3. (Previously presented) The medical device lead connector system of claim 1, wherein the external surface of the adaptor body conforms to an industry standard.

4. (Previously presented) The medical device lead connector system of claim 1, wherein the external surface of the adaptor body further includes a set of sealing rings positioned proximal to the conductive surface.

5. (Previously presented) The medical device lead connector system of claim 1, wherein the lead connector further includes a plurality of sealing rings positioned distal to the plurality of connector pads.

6. (Previously presented) The medical device lead connector system of claim 1, wherein the lead connector further includes a mechanical stop to engage the distal end of the adaptor body when the lead connector is fully inserted within the lumen of the adaptor body.

7. (Canceled)

8. (Previously presented) The medical device lead connector system of claim 1, wherein the key is a resilient force beam.

9. (Previously presented) The medical device lead connector system of claim 1, wherein each connector pad includes a surface depression adapted to mate with the key.

10. (Currently Amended) A medical device lead connector system comprising:

- (a) a connector header including a connector bore, the connector bore having an inner bore surface;

- (b) a lead having a lead body, a plurality of elongated insulated conductors extending within the lead body between a plurality of lead electrodes at a lead body distal end and a lead connector at a lead body proximal end, the lead connector including:

- an array of lead connector pads wherein the pads are distributed circumferentially in an adjacent spaced apart relationship around a periphery of the lead connector,

- a connector pin proximal of the array of lead connector pads, the connector pin being coupled to one of the plurality of lead electrodes, and each of the lead connector pads being coupled to an individual one of the other of the plurality of lead electrodes, wherein each connector pad includes a resilient protrusion adapted to mate with the key; and

- (c) an adaptor, comprising:

- an insulating adaptor body having a proximal end and a distal end;

- a lumen within the adaptor body having an inner lumen surface extending from a proximal end to a distal end and dimensioned to receive the lead connector for relative rotational movement therein;

- a connector ring extending circumferentially over a segment of an exterior surface of the adaptor body and shaped to form a surface depression along an inner portion of the connector ring, the depression dimensioned so as to be in registration

with the protrusion of a selected one of the lead connector pads at a time when the lead connector is inserted into the lumen of the adaptor body and rotated relative to the adaptor body about a longitudinal axis extending from the proximal end of the insulating adaptor body to the distal end of the insulating adaptor body so as to be in alignment with the selected lead connector pad;

wherein registration of the depression with the protrusion of a selected one of the lead connector pads at a time provides for lead electrode array selectivity; and

wherein the insulating adaptor body is dimensioned to be received within the connector bore of the connector header.

11. (Canceled)

12. (Currently Amended) A method for optimizing implantable medical device electrical stimulation therapy using a lead having a plurality of selectively active lead electrodes, comprising the steps of:

providing a lead connector at the proximal end of the lead, the lead connector including an array of individual, circumferentially distributed lead connector pads, and a connector pin proximal of the array of lead connector pads, wherein the connector pin is coupled to one of the plurality of lead electrodes and each of the individual, circumferentially distributed lead connector pads being coupled to an individual one of the other of the plurality of lead electrodes;

providing an adaptor, the adaptor comprising an insulating adaptor body having a proximal end and a distal end, a lumen within the adaptor body having an inner lumen surface extending from a proximal end to a distal end and dimensioned to receive the lead connector for relative rotational movement therein, a connector ring extending circumferentially over a segment of an exterior surface of the insulating adaptor body and shaped to form an electrical contact resilient key along an inner portion of the connector ring and extending through the insulating adaptor body into the

lumen to project from the inner lumen surface, the key being dimensioned to be in registration with one of the individual, circumferentially distributed lead connector pads at a time when the lead connector is inserted into the lumen of the adaptor body and rotated relative to the adaptor body to align with any one of the plurality of lead connector pads;
inserting the lead connector within the adaptor lumen; and
rotating the adaptor about an axis extending through the adaptor to selectively align the key of the adaptor in registration with one of the lead connector pads and thereby select the lead connector pad and thereby permit selective activation of one of the lead electrodes, wherein lead electrode array selectivity is provided.

13. (Previously presented) The method of claim 12, further comprising the step of inserting the adaptor into a connector header bore of an implantable medical device to electrically couple the selected lead connector pad to the implantable medical device.

14. (Cancelled)